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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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LARSON NEWMAN ABEL POLANSKY & WHITE, LLP
5914 WEST COURTYARD DRIVE
SUITE 200
AUSTIN, TX 78730

EXAMINER	
LEE, RICHARD J	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,737	LAKSONO ET AL.	
	Examiner	Art Unit	
	Richard Lee	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,13-21,51-59,63-70 and 79-84* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11, 13-21, 79-84* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 4/25/06, 7/10/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The request filed on July 10, 2006 for a Request for Continued Examination (RCE) is acceptable and a RCE has been established. An action on the RCE follows.

2. In the amendment filed July 10, 2006, it is to be noted that the applicants have incorrectly numbered claims 79-84. Applicants have also incorrectly numbered claim 81 twice. Since the amendment after final rejection filed April 7, 2006 was not entered as indicated in the Advisory action mailed April 27, 2006, newly proposed claims 71-78 from the amendment dated April 7, 2006 are not pending and should not be listed as shown in the amendment dated July 10, 2006. Claims 80-84 should therefore be renumbered as claims 71-77, respectively, with the first claim 81 being renumbered as claim 73 and the second claim 81 renumbered as claimed 74. Please take note that the Examiner will hereinafter refer to claims 79-84 from the amendment filed July 10, 2006 as claims 71-77, respectively. The applicants are required to furnish the claims as numbered by the Examiner in the response to this Office Action.

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-11, 13-21, and 71-74 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Independent claims 1, 21, 71, and 72 are directed to respective claims applying a mathematical formula as part of a seemingly patentable process, but one cannot "seek patent protection for that formula in the abstract". The method claims 1, 21, 71, and 72 respectively do nothing more than solve mathematical problems and manipulate an abstract idea without practical application by physical transformation or without practical application that produces any useful, tangible, and concrete results. And since dependent claims 2-11, 13-20, 73, and 74

are directed to further limitations based on the respective methods of claims 1, 21, 71, and 72, claims 1-11, 13-21, and 71-74 as a whole for reasons above do not fall within the statutory classes set forth in 35 U.S.C. 101.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Specification lacks written description for the limitation "determining the second quantization value based on a second ratio of the first ratio to a source bit count" as recited in claim 11.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 71-73, 75, and 77 are rejected under 35 U.S.C. 102(e) as being anticipated by Furukawa et al of record (6,834,080).

Furukawa et al discloses a video encoding method and video encoding apparatus as shown in Figure 1, and the same method and computer program stored in a computer readable

medium comprising instructions to manipulate a processor as claimed in claims 71-73, 75, and 77, comprising the same receiving a first quantization value for a first macroblock (i.e., quantization width QP parameter as generated by 32 of Figure 1, see column 4, lines 18-35, column 5, lines 41-51, column 6, lines 57-61); determining a second quantization value (i.e., parameter correction 34 of Figure 1 corrects encoded parameters, which includes quantization width QP (first quantization value), thereby providing a second quantization value QP' as shown in expression (8), see column 6, lines 57-61, column 7, lines 4-10, column 11, line 64 to column 12, line 21) for the first macroblock based on the first quantization value and an expected amount of video data in a video buffer (i.e., the number of generated bits 133 of Figure 1 output from buffer 21 represents the first expected amount of video data, which is used as a basis for calculating the second quantization value, see column 7, lines 4-10, column 11, line 64 to column 12, line 21); wherein the first quantization value is received from a source of the first macroblock (i.e., as provided by 32 of Figure 1, see column 2, lines 46-54, column 4, lines 10-36, column 5, lines 41-59, column 9, lines 14-19); and wherein the expected amount of video data is determined based on a modeling of the video buffer (i.e., as provided by 21 of Figure 1, see column 6, lines 9-22, column 11, lines 47-63, column 12, lines 26-34), wherein the modeling of the video buffer includes determining a fullness of the video buffer based on a difference between an input rate and an output rate (i.e., number of encoded bit determination section 33 determines the fullness of video buffer 21 based on a difference between a input rate (target number of bits 134) and a output rate (number of generated bits 133), thereby providing a modeling of the video buffer, see column 6, lines 3-22).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 74 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al as applied to claims 71-73, 75, and 77 in the above paragraph (8), and further in view of Legall et al of record (5,929,916).

Furukawa et al discloses substantially the same method and computer program stored in a computer readable medium as above, but does not particularly disclose wherein the modeling of the video buffer includes using a VBV buffer model as claimed in claims 74 and 76. Such technical features are however old and well recognized in the art, as exemplified by Legall et al (see columns 4-5, column 14, lines 35-47). Therefore, it would have been obvious to one of ordinary skill in the art, having the Furukawa et al and Legall et al references in front of him/her and the general knowledge of bit budget constraints of a video encoder, would have had no difficulty in providing the VBV buffer modeling system of Legall et al as part of the video encoder as shown in Figure 1 of Furukawa et al for the same well known VBV buffer occupancy level control of the encoder model of the decoder buffer fullness thereby preventing underflows and overflows purposes as claimed.

11. Claims 51-59, and 63-70 are allowed.

12. Due to the above new grounds of rejections, the Examiner wants to point out that only pertinent arguments from the amendment filed July 10, 2006 will now be addressed.

The applicants' detail analysis of the enablement and written description requirements under 35 U.S.C. 112, first paragraph as provided at pages 10–15 of the amendment filed July 10, 2006 is greatly appreciated. The applicants' specific arguments have persuaded the Examiner to withdraw the rejection of claims 17-21 and 67-70 under 35 U.S.C. 112, first paragraph. The applicants however have failed to address the rejection of claim 11 under 35 U.S.C. 112, first paragraph, and therefore the rejection of claim 11 is maintained as shown in the above paragraph (5).

The applicants argued at page 16 of the amendment filed July 10, 2006 that "... Furukawa fails to disclose that the encoded parameter generator 32 is a source of a first macroblock as recited in claim 79 ... even if it is assumed, arguendo, that the quantization width QP is the claimed first quantization value, Furukawa fails to disclose, or even suggest, that a first quantization value is received from a source of a first macroblock as recited by claim 79 ...". The Examiner respectfully disagrees. The applicants' attention is directed to column 2, lines 46-54 and column 4, lines 10-36 of Furukawa where it is that the video signal 100 is composed of macroblocks of data and that the quantization widths in units of macroblocks are generated as the encoded parameters. This is further emphasized at column 9, lines 14-19 of Furukawa where it is taught that the "encoded parameter generator 32 conducts a processing for changing the quantization width for each macroblock". These particular passages of Furukawa clearly teach the particular limitation of "wherein the first quantization value is received from a source of the first macroblock" as claimed.

The applicants argued at pages 17-19 of the amendment filed July 10, 2006 that "... the Final Office Action asserts that element 21 of Figure 1 of Furukawa discloses the claimed feature of wherein an expected amount of video data in a video buffer is determined based on a modeling of the video buffer. The Applicants respectfully disagree ... the number of generated bits 133 is the actual amount of video data in the buffer 21, rather than an expected amount of video data in a video buffer as provided by claim 80 ... Furukawa fails to disclose or suggest that the number of generated bits 133 is determined based on a representation or theoretical construct of the buffer 21 ... while Furukawa discloses the determination of the actual amount of data input into the buffer 21, Furukawa fails to disclose an input rate or an output rate for the encoded bit stream 11 with respect to the buffer 21 and therefore fails to disclose a difference between an input rate and an output rate ...". The Examiner respectfully disagrees. As stated by the applicants, Furukawa teaches the twice encoding of video signal 101 and specifically at column 6, lines 9-22 and column 11, lines 46-63 that if the difference between the number of generated bits 133 of the encoded bit stream 111 resulting from the second encoding is within a threshold of the target number of bits 134, the encoded bit stream is output from the buffer 21 as encoded output 200. It is clear from these passages that the expected amount of video data output from the video buffer 21 is dependent on the number of generated bits 133 meeting a certain criteria, and as such it is submitted again that Furukawa anticipates the features of wherein the expected amount of video data is determined based on the modeling of the video buffer. And it is submitted again that Furukawa anticipates the "modeling of the video buffer includes determining a fullness of the video buffer based on a difference between an input rate and an output rate", since Furukawa teaches at column 6, lines 3-22 that the number of encoded bit

determination section 33 determines the fullness of video buffer 21 based on a difference between a input rate (target number of bits 134) and a output rate (number of generated bits 133), thereby providing a modeling of the video buffer.

The applicants argued at pages 19-20 of the amendment filed July 10, 2006 that "...the Office proposes using the VBV buffer modeling system of Legall to model the output buffer of the video encoder of Furukawa ... it typically is assumed that a video encoder system will not have means to directly determine the fullness state of the input buffer of the video decoder that is receiving the encoded output of the video encoder. Thus, VBV buffer modeling is used at the video encoder to create a representation or theoretical construct of the input buffer of the video decoder so that the video encoder can throttle its output based on any expected underflows or overflows of the input buffer of the video decoder that are determined from the VBV buffer model ... In the system of Furukawa, the video encoder has direct access to the buffer 21 and therefore directly determines the actual fullness state of the buffer 21 as the number of generated bits ... the Final Office Action fails to establish a prima facie case of obviousness ...". The Examiner respectfully disagrees. The Examiner wants to point out that the critical issue at hand is that Legall nevertheless teaches the particular VBV buffer protections based on the modeling of a video decoder buffer (see columns 4-5, and column 14, lines 35-47) that may obviously be provided for the video encoding system of Furukawa, thereby further rendering the claimed invention obvious.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (571) 272-7333. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

9/21/06